

# Release B CDR RID Report

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Review Release B CDR

Originator Ref

Priority 2

Section

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Figure Table

Category Name Planning (PLS) Design

Actionee ECS

Sub Category

Subject PGE Profile Data Structures

## Description of Problem or Suggestion:

Data structures in PGE Profile probably need to be extensible to accommodate real experience.

## Originator's Recommendation

Rationale:

We probably have not caught all of the statistical measures needed for capacity management. Thus, we may expect models for management to need these additional measures.

## GSFC Response by:

GSFC Response Date

HAIS Response by: Michael J. Mauthe

HAIS Schedule

HAIS R. E. C. Schwartz

HAIS Response Date 12/2/96

The design of the PGE Profile is extensible to further ECS releases of the PLS (Planning Subsystem) and DPS (Data Processing Subsystem ) software. The addition of a new performance statistic or resource requirement can be accommodated by changes to the code and database tables of PLS and DPSPDPS. What follows is a discussion of what areas of code would have to change to support a new performance statistic or resource requirement, and the number of man-hours that would be required to make the change.

The performance information and resource requirements are held within C++ classes in the PGE Profile, so to add a new statistic or requirement, the corresponding attribute (to hold the new value) and methods (to set and get the value) would have to be added to the class. This means about 20 SLOC of modified code in the appropriate C++ class. The tables that support these classes in the PDPS (Sybase) database (and thus store the performance statistics and resource requirements) would have to be regenerated to add a column for the new value. The regeneration of Sybase tables is a fairly simple process, requiring no more than a couple (2) of hours work .

During SSIT this new performance statistic or resource requirement would have to be collected. The tool to do that would have to be modified to collect (from a locally run PGE) the new performance statistic or resource requirement. This assumes, of course, that the new performance statistic is available through UNIX system calls. Another 20 SLOC is required to update the collection of performance statistics to include a new parameter. The PGE Registration GUI and its supporting classes would have to be modified to allow for the input of the new statistic or resource requirement (from both the performance tool and the user), and the methods that read and store from the GUI to the PDPS database would have to have code added to handle the new statistic or requirement. Updating a GUI is a bit more complicated than normal C++ classes, so about 100 SLOC is needed to get the PGE Registration GUI to accept the new performance statistic or resource requirement.

Most performance statistics are not taken into account when planning the PGE (currently only CPU time is included in the plan), thus it is unlikely that the addition of performance statistic will cause modifications in the planing software. The same is true for resource requirements; most resource requirements tie a PGE to a machine or set of machines, and selecting the machine or group of machines for a PGE is done during SSIT. So the p PLSlanning code should not have to change. The process and code for SSIT to allow for the selection of a machine or group of machines for a PGE would also not have to change, but the I&T personnel would may have to take into account the new statistic or requirement when assigning processing resources.

To recalculate this new statistic or requirement during PGE execution, the DPS resource class would have to modified to both collect and retain (in the PDPS database) the new statistic or requirement. The separate PDPS database table that retains PGE execution statistics (different from the PGE Profile) would have to be regenerated to allow DPS to store the new value.

So to add a new performance statistic or resource requirement (that does not affect the planning and scheduling of algorithms) would require about 140 SLOC of code work. This translates to (including the time to rege nerate the

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algorithms) would require about 140 SLOC of code work. This translates to (including the time to regenerate the Sybase tables) about 2 weeks to 1 month of development time, depending on the knowledge of the developer.

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Status	Closed	Date Closed	12/20/96	Sponsor	Kempler
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\*\*\*\*\* Attachment if any \*\*\*\*\*

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